Mindfulness based approaches to obesity and weight loss maintenance

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Abstract: Counselors may encounter clients who wish to make such lifestyle changes as healthy eating and weight management. Mindfulness, defined here as the practice of nonjudgmentally attending to the present moment while monitoring reactivity, has been adapted for use in treating many self-regulation disorders; mindfulness-based eating approaches support intuitive or attuned eating, an approach to weight management that helps individuals recognize internal cues in support of enhanced self-regulation. One program for developing mindfulness skills in individuals who want to maintain weight loss is the Enhancing Mindfulness for the Prevention of Weight Regain (EMPOWER) Program. Participants report changes in eating behavior, thinking patterns, emotional reactions, and physical activity and increased acceptance of personal responsibility for making choices, planning, asserting needs, and accomplishing personal goals. The article reviews key mindfulness skills for clinical practice.

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Addressing healthy eating and weight management are of increasing importance in counseling practice because the national rate of obesity in the United States has been rising rapidly for two decades (Centers for Disease Control and Prevention, 2010). Behavioral and environmental factors are believed to contribute to the epidemic. Intensive, structured behavioral programs for obesity can result in significant reductions in weight (Anderson, Konz, Frederich, & Wood, 2001). Unfortunately, maintaining that weight loss is very difficult. Body weight is a result of not just behavioral choices but also genetic, hormonal, and metabolic factors (Comuzzie, 2001; Tataranni & Ravussin, 2002). Wing and Phelan (2005) estimated that no more than 20% of individuals who lost weight during a standard behavioral weight loss program maintained the losses over time. Short-term weight loss is most often accomplished through substantial reductions in caloric intake, but successfully maintaining weight depends on different skills and lifestyle changes, such as more moderate calorie restriction and significant and sustained increases in the frequency and intensity of physical activity (Hill, Thompson, & Wyatt, 2005).

One major reason why dieters are unlikely to keep weight off is that a diet based on significant caloric restriction requires that the dieter learn to ignore somatic cues associated with hunger. Accurate perceptions of these internal cues, and appropriate responses to them, are necessary for successfully regulating eating behavior. An alternative to the dieting paradigm is the intuitive or attuned eating approach. This strategy focuses on changes in health behavior rather than on weight loss alone (Bacon, 2003; Cogan & Ernsberger, 1999; Robison, 2005); there is evidence that lifestyle changes, even without weight change, can reverse or minimize morbidities associated with obesity, among them cardiovascular disease and diabetes (Bacon, Stern, Van Loan, & Keim, 2005; Gaesser, 1999; Miller, 1999).

Self-regulation is vital to healthy lifestyle choices. Mindfulness, defined as nonjudgmentally attending to the present moment while monitoring reactivity (e.g., Kabat-Zinn, 1994), has been adapted to treat many self-regulation disorders, including substance abuse, depression, stress management, chronic pain, and self-injurious behavior (Baer, 2003; Greeson, 2009; Hofman, Sawyer, Witt, & Oh, 2010). Mindfulness and mindful eating are also proving to be useful strategies within interventions designed to create healthy lifestyle choices and support maintenance of weight loss (e.g., moderating eating behavior and exercising more). The purpose of this article is to review the literature on mindfulness-based approaches to treating eating-related disorders and then present a mindfulness-based program for preventing weight regain.

TREATMENT OF DISORDERED EATING

Theoretical Considerations

Cognitive-behavioral therapy (CBT) has been shown to be effective in treating eating disorders as well as in short-term weight loss (Cooper et al., 2010) and improvements in binge eating disorders (Vocks et al., 2010). Several authors have identified the need for more effective treatments due to dropout rates (Cooper & Shafron, 2008; Sly, 2009) and the significant risk for relapse (Carter, Blackmore, Sutandar-Pinnock, & Woodside, 2004; Cooper et al., 2010; Federici & Kaplan, 2008). Less research attention has been given to individuals with eating restrictions and anorexia (Roth & Fonagy, 2005). CBT interventions include strategies for changing dysfunctional thoughts and beliefs that play a role in disordered eating (Gongora, Derksen, & van Der Staak, 2004; Waller, Dickson, & Ohanian, 2002).

Mindfulness-based approaches, on the other hand, rather than being directed at changing the content of thoughts, instead cultivate a more accurate way to witness them. Mindfulness supports a neutral nonjudgmental witnessing of experience; thoughts can be experienced as dynamic and transient events that are not always grounded in fact or reality (Segal, Williams, & Teasdale, 2002). This neutral witnessing

includes an awareness of all of one's experience, including thoughts, feelings, and body sensations.

Mindfulness interventions are based on the theory that disordered eating is grounded in disconnection from appetite and other physical needs. When somatic and mental events go unrecognized they sometimes trigger automatic behaviors like eating (Boudette, 2011; Kristeller & Wolever, 2011; Wolever & Best, 2009). Mindfulness trains individuals to notice distressing thoughts, emotions, and sensations that would have otherwise gone unnoticed. One learns to bring the experience fully into awareness so that many types of distress that would have provoked an automatic reaction can be tolerated. Thus, distress tolerance is increased and automaticity reduced. Because reduced reactivity enhances tolerance, the cultivation of mindfulness becomes self-reinforcing.

Mindful awareness and reduced behavioral reactivity may reduce nonhunger eating in several ways (Kristeller, Baer, & Quillian-Wolever, 2006; Kristeller & Wolever, 2011; Wolever & Best, 2009). Mindful eating may increase awareness of the physical sensations of hunger and fullness, resulting in decreased food intake and increased satisfaction. The cultivation of nonjudgmental awareness also allows the participant to better understand and decouple automatic behaviors that have become linked to emotional reactions, negative or distorted thinking processes, or misattribution of physical sensations (Wolever & Best, 2009). Increased physical activity may also be cultivated through responsiveness to the body's need for movement. Mindfulness cultivates self-acceptance and compassion, qualities that may disrupt the cycle of distress-overeating, negative emotions, and harsh self-recrimination that is common in compulsive eating (Gongora et al., 2004). Together, these elements can re-engage the body's innate feedback mechanisms that help regulate weight (Kristeller et al., 2006; Kristeller & Wolever, 2011; Wolever & Best, 2009).

Mindfulness-Based Approaches to Disordered Eating

Recent studies have explored the clinical efficacy of mindfulness in treating obesity and eating disorders; the early results are promising. Lillis and colleagues (2009) supplemented their weight loss program with a one-day mindfulness workshop based on principles from Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). The workshop targeted obesity-related stigma and psychological distress. At a three-month follow-up, participants showed more improvement in obesity-related stigma, psychological distress, and body mass than those randomized to the wait-list control group. Mediational analyses found that these outcomes were mediated by changes in weight-specific acceptance and psychological flexibility.

Tapper et al. (2009) also based their weight-loss intervention on ACT. Women randomized to the intervention attended four two-hour workshops designed to teach (a) cognitive defusion, defined as the ability to see thoughts as just thoughts rather than ideas that need to be believed and acted upon; (b) acceptance of difficult feelings and sensations; (c) nonjudgmental attitudes; and (d) commitment to personal values. At six-month follow-up, those participants who reported greater use of the workshop principles reported more increases in physical activity and greater reduction in body mass index (BMI) than controls. Reductions in binge eating mediated the reductions in BMI.

In addition to weight-loss interventions, mindfulness-based programs have been used to treat bulimia and binge eating disorders (Baer, Fischer, & Huss, 2005, 2006; Courbasson, Nishikawa, & Shapira, 2011; Hill, Craighead, & Safer, 2011; Kristeller & Hallett, 1999; Proulx, 2008; Safer, Telch, & Agras, 2001a, 2001b; Telch, Agras & Linehan, 2001) and eating restriction and anorexia (Heffner, Sperry., Eifert, & Detweiler, 2002; Merwin et al., 2011; Rawal, Enayati, Williams, & Park, 2009; Wisniewski & Kelly, 2003). These programs have been adapted from four different mindfulness approaches: (a) mindfulness-based cognitive therapy (MBCT; Segal et al., 2002); (b) the Mindfulness-Based Stress Reduction (MBSR) program created by Kabat-Zinn (1982, 1990); (c) ACT (Hayes et al., 1999); and (d) Dialectical Behavioral Therapy (DBT; Linehan, 1993a, 1993b). The core of each approach is to teach present moment awareness, self-awareness, acceptance, and avoidance of judging--all processes that positively influence affect regulation.

THE EMPOWER PROGRAM

One mindfulness-based approach to keeping weight off is the EMPOWER program, Enhancing Mindfulness for the Prevention of WEight Regain (Fikkan et al., 2010; Wolever et al., 2007; Wolever & Best, 2009). Designed in 2007 by researchers and clinicians at Duke Integrative Medicine and the Penn Program for Mindfulness (Wolever et al., 2007), EMPOWER teaches individuals who have previously lost at least 10% of

their body weight a new approach to maintaining weight loss. EMPOWER combines group mindfulness-based psychoeducational sessions with individualized telephonic coaching. Groups meet two hours weekly for 12 weeks, with booster sessions at 16, 20, and 24 weeks after the start of the study. All participants are asked to spend about 30 minutes a day practicing the mindfulness meditation skills learned in class. Participants also receive individualized health coaching by telephone for 30 minutes every other week starting at week 9 and continuing for six months, with a final call at month 15. In addition to helping individuals with goal setting and action planning, these health coaching calls are designed to help them apply mindfulness-based intervention skills to their daily lives. EMPOWER as described by Wolever and Best (2010) is discussed below.

Group Process and Content

The EMPOWER group sessions usually started with a brief meditation, followed by a 15- to 20-minute discussion of participant experiences in applying their new mindfulness skills during the previous week. Formal and informal meditation practices were introduced, with an emphasis on applying mindfulness to eating, physical activity, stress management, and behavior change. Each class introduced a different experiential mindfulness-based exercise on which the session's topic was based. At the end of each class, meditation practices and experiential exercises were assigned as homework. Participants received a CD with guided meditations to support their daily practice. These exercises were structured to progressively expand the ability of participants to apply mindfulness to increasingly challenging situations that could undermine healthy eating and physical activity.

Each of the 12 group sessions applied mindfulness principles to a specific topic, such as nutrition, physical activity, stress management, personal values, and goal-setting. Aspects of MBSR were taught during the first four weeks (Kabat-Zinn, 1982, 1990) to help participants develop nonjudgmental awareness by building a meditation practice. In the initial session, the group discussed obstacles to their weight loss and maintenance goals, such as low metabolism rates, stress, emotional reactivity, stress-related eating, old beliefs and habits, and "automatic pilot" behavior. They also were introduced to the concept of maintaining weight in the context of what they valued most in life. Mindfulness was presented as a way for them to learn about themselves by paying attention to their experience with a nonjudgmental spirit of curiosity; the idea that each individual was the expert on his or her life was emphasized throughout the program. One of the first exercises for learning mindfulness was taking 15 minutes to eat three raisins, paying close attention to all the sensations and thoughts involved in eating so slowly (Kabat-Zinn, 1990). Another exercise presented in the first session was "20 breaths"; the group leader talked the group through counting and noticing myriad details of 20 in-breaths and 20 out-breaths. This gave participants a brief and effective way to interrupt stress multiple times a day while reminding them of their personal goals.

Stress was presented as the interaction between an external event (stressor) and the internal reaction. Subsequent discussion added internal events (thoughts, feelings, sensations, or behavioral urges) to the conceptualization of stressors. Participants were encouraged to use structured mindfulness practices to recognize the physical, emotional, and cognitive reactivity that occurs during acute and chronic stress.

This training in mindfulness cultivated inner stillness and nonjudgmental awareness as a basis for both stress management and lifestyle change. Subjects were taught to carefully notice the affective and cognitive determinants of the urge to eat. Insight into the factors driving eating behavior helped participants to recognize and prevent eating that was not based on hunger. For example, if someone is eating to stay awake even though exhausted, the true need is rest or sleep. Helping individuals separate the experience of fatigue from the experience of physical hunger allows for a more appropriate solution to the need. An exercise useful in teaching participants to accurately register internal signals and emotions without judgment was called Stop-Breathe-Feel (Wolever et al., 2007). When participants began to eat, they were encouraged to take a moment to pause and register any emotions or sensations that were part of their impulse to eat. This momentary pause is an opportunity to choose whether eating will satisfy the need behind the impulse to eat.

In the second and third sections of the program, factors that support or impede healthy nutrition and exercise were explored, and participants were encouraged to use mindfulness to uncouple stressful events from maladaptive automatic reaction using a chain-reaction model adapted from DBT (Linehan, 1993a, 1993b). In the model, mindfulness is described as a way to interrupt an automatic stress reaction to allow for more optimal behavioral choices.

Sessions on eating behavior and food choices focused on recognizing the sensations of hunger and fullness using a seven-point scale (Craighead & Allen, 1995). Group discussions encouraged awareness of the physical sensations of hunger and fullness and how to distinguish these from thirst and from emotions. "Stop-Breath-Bite" was introduced to train participants in mindful eating, with a focus on noticing sensations. It involves stopping after each bite, putting the food down completely, eating with attention to all aspects of the eating process, and taking a full breath before each bite. Approximately half the sessions incorporated eating awareness exercises using food provided by the leader or participants. Discussions addressed common experiences in weight loss maintenance including changing the focus from "losing" to "maintaining" weight, intensifying physical activity, ambivalence toward continued moderation of food intake, distorted thinking about realistic weight loss, and learning to view weight regulation as a permanent lifestyle change.

Mindfulness was also used to promote physical activity. Several sessions focused on learning to move mindfully (e.g., mindful walking and chair yoga) and to help participants experience the body moving rather than think about the body moving. This distinction helps individuals to better understand and prioritize the needs of the body. A similar distinction (experiencing the body versus thinking about or judging it) was reiterated throughout the course using body scans (Kabat-Zinn, 1994). The distinction was used to help participants make choices about increasing activities of daily living (e.g., parking farther away, taking the stairs, and going into stores rather than using the drive-through), and increasing structured exercise (e.g., aerobics, strength, flexibility).

One skill, "Only this Moment," particularly helped with structured exercise. It taught participants to focus on the present moment during exercise as a way to check on breathing and physical stamina (Wolever et al., 2007). Individuals reported that they were better able to continue exercising when they learned to check in with their bodies during effort, separate sensations from a story about the sensations, and recognize they were not in pain. For example, a participant might recognize that she or he is breathing moderately hard, but that is not the same as a story like "I just can't walk anymore." Participants were also taught to cultivate a mindfulness-based activity regimen that helped them to manage stress and find pleasure in physical activity. These sessions addressed exercise avoidance and other obstacles to physical activity. Again, mindfulness-based strategies were used to support intentionality in linking to long-term goals as a way to overcome resistance to physical activity.

Later group sessions were dedicated to values clarification and writing a personal mission statement (similar to ACT approaches). Mindfulness meditations were used to explore the role of intention and choice in weight maintenance as links to personal values and a long-term vision for health. An exercise called "Stop-Breath-Connect" encouraged participants to pause before behaviors they were trying to change so that they could remember the long-run importance of the change (Wolever et al., 2007). Participants were taught how to use their "inner compass," a "felt sense" of whether or not they were acting in accordance with their own values and goals. Such exercises helped the group become more aware of the connections between their personal mission, values, long-term vision for health, and health goals. Identifying and then rehearsing a personal mission statement with concomitant health goals was used to elicit motivation for health choices. This personal exploration was supported in the health coaching sessions. Participants also learned how to make SMMART goals as a way of moving towards personally significant goals. A SMMART goal is Specific, Measurable, Mindfully supported (which mindfulness practices support this goal?), Action-oriented (the action is completely under the participant's control), Realistic, and Time-bound.

Sequencing of Skills

Home practice assignments consisted of daily meditation and mindfulness exercises related to the weekly session. Table 1 lists mindfulness techniques and tools used in the program. The mindfulness exercises were sequenced to build five types of skills:

* Recognizing and understanding stress reactivity, particularly the frequency of stress-related behaviors and events, including the thoughts, emotions, sensations, and behavioral urges that build from an inciting stressor and result in undesired behaviors.

* Ability to initiate and sustain experiential contact with stress reactivity. It is difficult to carefully observe a stress reaction while it is in process because it happens so quickly and the experience of it is often aversive. This skill allows awareness to remain stable and connected with experience as a reaction unfolds, providing the foundation for a more detailed understanding of the process of reactivity and a more

concrete appreciation of how it is expressed or discharged as behavior.

* Separating out specific components that interact to amplify reactivity (e.g., emotion, cognition, sensation). This amplification drives unwanted behaviors in the realms of stress, eating, and physical activity. By breaking down the stress reaction and dealing with each component separately, participants learn to reduce the intensity of the reaction. Examples are recognizing stress-associated cognitive distortions, making the opportunity to evaluate and potentially reframe them, or identifying a stress-related impulse and working to tolerate it instead of discharging it in behavior.

* Replacing habitual reactions and behaviors with intentionally chosen ones. This skill trains participants to recognize a "gap," a moment between an event (stressor, thought, or urge) and the reaction. If this moment is not recognized, reflexive or "automatic pilot" behavior typically results. Recognition of it creates the opportunity to replace automatic with consciously chosen behavior. Emotion-driven eating is an example of an automatic behavior that can be modified with this skill.

* Connecting in the moment with deeply held values and goals. Participants are trained to reconnect in the moment with what is most important to them. This makes it possible to align daily behaviors, such as those relating to eating and physical activity, with long-term goals in a way that supports personal mission and health goals. The metaphor of "connecting with one's inner compass" is an example of this skill: Just as an actual compass helps to navigate a landscape, the inner compass points toward chosen values.

Contraindications

In our clinical experience, the only participants for whom meditation is contraindicated are those with poor reality testing. Clinicians planning to begin a mindfulness-based intervention are advised to carefully screen individuals who show interest in the group. Severe negative reactions to meditation and mindfulness practices are uncommon, although dissociative experiences and intrusion of traumatic memories have been reported. It is common for individuals to recognize and diffuse agitation or anxiety and other emotions, so group facilitators should be well-versed in tolerating emotion. One reason why it is helpful to have a check-in at the beginning of each group session is to screen for difficulties that may arise in meditation practice.

DISCUSSION

Honor the Range of Individual Preferences

Clinicians are encouraged to offer flexible programs that respond to the preferences of participants and that teach values-based decision making. In qualitative interviews after the EMPOWER program ended, one consistent theme was the wide variety of preferences for different mindfulness techniques (Wolever, Caldwell, Fikkan, Yeung, & Wakefield, 2010). During the interviews, participants mentioned over 20 techniques they had learned that they had incorporated into their daily lives; what worked for one was not necessarily effective for others. At one extreme, some participants continued with daily sitting meditation. At the other extreme, some felt they would never have been able to meditate on their own without guided practice, although even those reported that the informal mindfulness practices were helpful. There was a similar range of preferences for group versus individual support. Some participants felt the group was most helpful and found less value in individual coaching; others felt that individual coaching was most helpful.

Participants also expressed a range of preferences for internal or external accountability. All had previously been in programs that emphasized, to varying degrees, external accountability for weight loss. Some had attended groups like Weight Watchers, where there was a weekly weigh-in and they felt accountable to the group. Others had attended structured, physician-supervised programs where health care providers rated weight and food diaries for acceptability. In contrast, the EMPOWER program promoted internal accountability' by having participants examine their own values, focus on their health goals, and respond to their physical and emotional needs in a mindful way.

Participants did have some sources of external accountability in EMPOWER even though that was not its focus. Some experienced the group not just as providing support in working toward personal health goals but also as an external source of accountability because they did not want to let the others down. A scale was available at each session for participants tracking their own weight; however, weighing was not a requirement and the facilitator did not oversee it--the scale was simply an option. The individual health

coach also provided external accountability by asking about progress toward individual goals. Interestingly, while many participants reported having an increased sense of internal accountability, of making decisions for themselves rather than to please an external authority, several preferred to be accountable to someone other than themselves for their food choices and weight management. As one participant said, "I need somebody to stand over me."

Clinician Considerations

Perhaps the most important consideration for clinicians who want to implement mindfulness approaches is their own meditation experience. Because mindfulness can only be learned through experience, to skillfully guide mindfulness-based learning providers need a robust personal practice. There is even recent tantalizing evidence that clinicians who practice meditation have clients with better outcomes than clinicians who do not (Grepmair et al., 2007). This study examined the course and results of 124 inpatients treated for nine weeks by 18 psychotherapists-in-training. Half of the therapists were randomly assigned to be part of a meditation group; the other half did not meditate. Patients also were randomly assigned to the meditating or non-meditating therapists. Patients assigned to therapists who meditated showed significantly better results than those assigned to therapists who did not meditate on measures of somatization, insecurity in social contact, obsessiveness, anxiety, anger/hostility, phobic anxiety, paranoid thinking, and psychoticism. No significant differences in outcome were found on measures of perception of distrust and the feeling of being used (paranoid thinking). In addition to the health benefits of meditation for the clinicians themselves (e.g., Greeson, 2009; Hofman et al., 2010), promoting mindfulness in counselors thus shows promise for improving results for their clients.

Finally, clinicians who wish to work with clients on issues of weight loss and obesity are highly encouraged to examine their own attitudes toward obesity. Obese persons are often targets of discrimination, and helping professionals may also feel repulsed by them (Puhl & Brownell, 2001). Many people associate obesity with laziness or a lack of self-discipline (Hilbert, Rid, & Braehler, 2008). Kaplan and Thomas (1981) found that assessment of a client by rehabilitation counseling students was greatly influenced by whether the client appeared obese. The students perceived obese clients as less attractive, less competent, more emotionally dependent, and less able to confront problems than non-obese clients. As with other disabilities, negative biases can influence diagnostic decisions through confirmatory bias and thus influence the quality of service provided to obese clients (Strohmer & Shivy, 1994). "Clinician, know thyself" remains a central ethical imperative when considering work with clients who are obese. Fortunately, mindfulness meditation can help clinicians both know themselves and become more tolerant of others.

CONCLUSION

Intuitive or attuned eating, along with mindfulness-based behavior change, is an important alternative to traditional approaches to weight management. This approach emphasizes reconnecting with internal signals and improving self-regulation. Mindfulness skills to improve self-regulation can be developed through a variety of formal and informal techniques. The EMPOWER program is one weight-maintenance program based on applying mindfulness skills. Clinicians are encouraged to offer flexible programs that respond to the preferences of participants and that teach values-based decision making. They are also strongly encouraged to develop and practice their own mindfulness skills.

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Table 1. Mindfulness Techniques and Tools Used in the Enhancing Mindfulness for the Prevention of Weight Regain (EMPOWER) Program.

Wisdom Tools	Knowledge and Other Tools
Sitting meditation	SMMART goals
General mindfulness	Using practice trackers
20 breaths	The Calorie King
Body scan	Nutrition guidelines
Stop-Breathe-Bite	Calories in = calories out principle
Mindful eating to notice taste	Knowledge about portion size
Awareness of hunger sensations	Reading food labels
Awareness of fullness sensations	Meal planning
Stop-Breathe-Feel	Restaurant dining
Stop-Breathe-Be	Exercise guidelines
Chaining exercise	Strategies for increasing daily physical activity
Mindful walking	Time management
Mindful stretching or yoga	Creating a personal mission statement
Only This Moment	Linking health goals to personal mission
Stop-Breathe-Connect to sense the inner compass	
Stop-Breathe-Connect to sense the intention of a behavior or goal	
Kind regard for self	